

22ND INTERNATIONAL

Technical Conference on the Enhanced Safety of Vehicles

Modern Vehicle Safety in a Global Society:
Celebrating 40 Years of Collaboration



22nd Enhanced Safety of Vehicles Conference
Washington, DC ★ June 2011

Second Announcement and
Conference Registration

www.esvconference2011.com



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**

COMMITTEE INFORMATION

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Scientific Review Committee
Abstract submission closed on October 4, 2010.
Each abstract was assigned to a minimum of two scientific experts for review. The review committee composed of international experts in various subject areas reviewed the abstract(s) and reported their recommendations to the Technical Session Chairperson for final paper selection. The deadline for final paper submission is March 16th, 2011.

Conference Secretariat
ESV 2011 Registration Office
American Small Business Alliance, Inc
www.asballiance.com

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WORDS OF WELCOME



The Honorable Ray LaHood
Secretary, U.S. Department of Transportation

On behalf of President Barack Obama, it is my pleasure to extend an invitation to participate in the 22nd International Technical Conference on the Enhanced Safety of Vehicles.

At the U.S. Department of Transportation, safety is our highest priority. The conference represents an important opportunity to work together to improve the safety of motor vehicles. Over the past 40 years, the combined efforts of the automotive industry, government, and the safety community have reduced the number of traffic deaths and injuries in many parts of the world through voluntary improvements and government safety regulations.

As we celebrate the achievements of the last four decades, let us also recommit ourselves to the task of further raising the safety bar. Our continued progress depends on sharing our best ideas. I hope you are able to attend and join us in this historic undertaking.

WORDS OF WELCOME



The Honorable David L. Strickland
Administrator, National Highway Traffic Safety Administration

On behalf of the United States Secretary of Transportation Ray LaHood and the U.S. Department of Transportation, I cordially invite you to this Nation's Capitol to attend the 22nd Enhanced Safety of Vehicles conference and to enjoy the sights and sounds of Washington, D.C.

The 22nd ESV Conference will celebrate 40 years of global collaboration in automotive safety and re-energize our work to reduce motor vehicle fatalities and injuries from traffic crashes. By bringing together the collective expertise and judgment of renowned international researchers, we hope to share ideas and transfer knowledge in the all-important areas of vehicle safety to minimize the adverse impact of traffic crashes around the world.

The automobile industry is on the threshold of a new era in vehicle safety. New and developing advanced vehicle technologies offer us a very realistic opportunity to dramatically reduce the tragic toll that vehicle crashes take on the world's population. Safety technologies are changing rapidly and researchers everywhere are working on innovative approaches to develop effective safety countermeasures across international boundaries. There is no better time or place to chart the future course of action for safety than at the 22nd Enhanced Safety of Vehicles Conference as the world's safety experts gather in Washington, D.C., June 13-16, 2011.

CONFERENCE VENUE

We are proud to announce that the 22nd International Technical Conference on the Enhanced Safety of Vehicles will be held in Washington, DC, June 13-16, 2011.

We invite you to our nation's capital rich with history, culture and symbols of freedom. The ESV conference is one of the world's premier events in the field of vehicle safety. It serves as an international forum for safety experts and attendees from all over the world to share advances in motor vehicle safety. The official language of the conference is English.

The Gaylord National Harbor Hotel

Just minutes outside of Washington, DC, Gaylord National Hotel & Convention Center offers visitors to the Capital region everything they are looking for. With 2000 luxurious rooms, including 110 lavish suites, the spectacular 18-story glass atrium welcomes you to the hotel, offering sweeping views of the Potomac River, Washington, DC and Old Town Alexandria.

To reserve accommodations at the conference rate please visit www.esvconference2011.com.



EXHIBIT INFORMATION

Why Exhibit

The Exhibition runs in parallel with the ESV Conference and provides a unique international forum focusing on a broad range of motor vehicle safety research issues. The exhibition will provide you with valuable opportunities to demonstrate, in tangible forms, your rapidly advancing, state-of-the-art automotive technology. The conference attracts a wide group of automotive engineers, research organizations, manufacturers, and international leaders in the field of motor vehicle safety research from government, industry, universities, and safety advocates. The Organizers of the ESV conference cordially extend to you this invitation to exhibit during this event. Reserve your space today by visiting: www.esvconference2011.com to complete your application and register.

Pricing for exhibit space will be \$25.50 per square foot. All booths are 10 x 10 and the number of spaces for purchase is based on availability.



PRELIMINARY TECHNICAL PROGRAM

Modern Vehicle Safety in a Global Society:
Celebrating 40 Years of Collaboration

Date	Time	Program	
Monday June 13	9:00 AM–11:00 AM	Opening Ceremony & U.S. Government Awards <i>Woodrow Wilson Ballroom</i>	Exhibition <i>Prince George's Hall</i>
	11:00 AM–11:30 AM	Exhibition Opening & Tour <i>Prince George's Exhibition Hall</i>	
	11:30 AM–1:00 PM	Lunch	
	1:00 PM–5:30 PM	Plenary Session & Government Status Reports <i>Woodrow Wilson Ballroom</i>	
	7:00 PM–9:00 PM	Welcome Reception <i>Orchard Terrace National Harbor</i>	

Date	Time	Track A	Track B	Track C	
Tuesday June 14	9:00 AM– 12:30 PM	Biomechanics #1: Crash Injury Analysis: Test and Computer Methods	Side Impact and Rollover Crash- es: Prevention and Occupant Protection	Assessment of Strat- egies for Integrated Improvements in Fuel Economy and Safety, Including Use of Alternate Fuels and Batteries	Exhibition <i>Prince George's Hall</i>
		U.S. / FRANCE	GERMANY / U.S.	NETHERLANDS / ITALY	
	12:30 PM– 2:00 PM	Lunch			
	2:00 PM– 5:30 PM	Biomechanics #2: Development of Crash Test Dummies Related Instrumentation and Analysis Techniques	Assessment of Performance of Occupant Pro- tection Systems for Children, Older Adults and Other Vulnerable Occupants	*Advanced Tech- nology #1: Safety Performance and Ef- fectiveness of Driver Assistance Technolo- gies, Test & Evalu- ation Procedures, Benefits Assessment	
		JAPAN / U.S.	JAPAN / U.K.	U.S. / SWEDEN	
				<i>*Two Sessions</i>	

PRELIMINARY TECHNICAL PROGRAM

Modern Vehicle Safety in a Global Society:
Celebrating 40 Years of Collaboration

Date	Time	Track A	Track B	Track C	
Wednesday June 15	9:00 AM– 12:30 PM	Student Safety Technology Design Competition, Finalist Oral Presentations	Panel Discussion Vehicle Safety: Regulatory Compliance & Enforcement and Defects Investigations	Advanced Technology #2: Human Performance and Driver Behavior	Exhibition <i>Prince George's Hall</i>
	10:30 AM		U.S. / JAPAN	U.S. / GERMANY	
			Continuing Advanced Technology #1		
		U.S. / SWEDEN			
	12:30 PM– 2:00 PM	Lunch			
2:00 PM– 5:30 PM	Restraint System Design and Performance Challenges: Effects of Future Fleet Changes	Advancements in Pedestrian and Other Vulnerable Non- Occupant Road User – Safety	NCAP and Other Non- Regulatory Strategies for Improving Safety		
		U.S. / NETHERLANDS	SWEDEN / AUSTRALIA	AUSTRALIA/ U.S.	
7:00 PM– 11:00 PM	Gala Dinner				

PRELIMINARY TECHNICAL PROGRAM

Modern Vehicle Safety in a Global Society:
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Date	Time	Track A	Track B	Track C	
Thursday June 16	9:00AM– 12:30 PM	Vehicle Structural Design Changes: Implications for Frontal Impact Protection and Compatibility U.K. / CANADA	Advances in Driver Assistance Systems for Heavy Trucks and Buses & All Aspects of Motorcycle Safety U.S. / KOREA	Assessment of New and Improved Field Data Collection & Analysis Methods GERMANY/ U.S.	Exhibition <i>Prince George's Hall</i>
	12:30PM– 1:00 PM	Closing Ceremony - Student Winners Announced			
	1:00 PM– 2:00 PM	Light Lunch			



TECHNICAL SESSION TOPICS

Biomechanics #1: Crash Injury Analysis: Test and Computer Methods

Chairperson: Stephen Ridella, United States
Co-Chair: Philippe Vezin, France

To effectively and efficiently motivate the incorporation of appropriate safety countermeasures to address the multitude of automotive crash scenarios requires ever more diverse assessment tools, more robust injury criteria and complex test procedures. To advance the discussion on these items, this technical session invites papers to address (1) the development and application of analytical and experimental techniques to better understand the human impact injury process, (2) techniques that enhance the identification of mechanical responses that are determinants of the injury outcome, and/or (3) processes that enhance the interpretation and predictive accuracy of dummy responses and injuries. Also included in this discussion will be the injury criteria capable of addressing real world injuries, associated instrumentation for anthropometric test devices, and other related topics. Additionally, papers related to computer modeling methods for dummy development, human injury prediction, crash injury reconstruction and other related topics are welcome in this session.

Side Impact and Rollover Crashes: Prevention and Occupant Protection

Chairperson: Bernd Lorenz, Germany
Co-Chair: Riley Garrott, United States

Advanced vehicle control and safety technologies are being introduced into vehicles at a fast pace. For example, electronic stability control systems are already available on most vehicles sold in the U.S. today. However, rollover related deaths are still a significant portion of the overall fatalities. In the U.S., rollovers account for about 3 percent of crashes but over 30% of traffic-related deaths. Since rollovers and related deaths will continue to be overrepresented, research into rollover occupant protection has continued. Recently, the U.S. has adopted a new roof crush requirement and new ejection mitigation requirements are being considered. Internationally, research is underway to investigate dynamic rollover occupant protection interventions. This session is inviting papers that discuss the various technologies that are available or are being developed to prevent rollover crashes or to protect occupants in rollover crashes. Side impact crashes also account for a large percentage (approximately 25%) of crash fatalities and injuries. Recent US side impact standards upgrades and possible European upgrades will challenge manufacturers to improve side impact crashworthiness. This session is also inviting papers related to occupant protection in side impact crashes.

TECHNICAL SESSION TOPICS

Assessment of Strategies for Integrated Improvements in Fuel Economy and Safety, Including Use of Alternate Fuels and Batteries

Chairperson: [Jac Wismans, The Netherlands](#)

Co-Chair: [Antonio Erario, Italy](#)

Through economic and regulatory pressures, automobile manufacturers are striving to improve fuel efficiency of vehicles. Conventional wisdom is that more fuel efficient vehicles are lighter and smaller and are not as safe as their heavier and larger, less fuel efficient counterparts. In the age of advanced technologies for higher fuel efficiency and for enhancing safety, opportunities exist for both fuel efficiency and improved safety to coexist without the necessary trade off of fuel efficiency against safety. This session is inviting papers on the subject of strategies for improving fuel economy and safety, and on the impact of fuel saving vehicle designs on crashes and safety. Included in these subject areas will be papers that discuss ongoing research activities in advanced fuel saving and safety technologies and papers regarding the safety of batteries (including lithium-ion chemistries) as well as other alternative fuel technologies.

Biomechanics #2: Development of Crash Test Dummies Related Instrumentation and Analysis Techniques

Chairperson: [Koshiro Ono, Japan](#)

Co-Chair: [Bruce Donnelly, United States](#)

New crash test dummies, improvements to existing crash dummies and analytical techniques to evaluate dummy response are continually being developed to assess the various crash modes and to improve dummy biofidelity. For example, in recent years two different pairs of side impact dummies have been developed along with the Q family of child dummies and two different rear impact dummies. The THOR advanced frontal dummy development is nearing completion and a rollover dummy and a dynamic suppression dummy may be needed in the future. Existing dummies, such as the HIII family, need to be updated to keep pace with ever changing vehicle technologies changing injury patterns. Technical papers are invited to discuss new dummies and improvements to existing dummies, as well as related instrumentation and analysis techniques that are under development to address future safety needs for vehicle design, testing and restraint system development.

Assessment of Performance of Occupant Protection Systems for Children, Older Adults and Other Vulnerable Occupants

Chairperson: [Hideki Yonezawa, Japan](#)

Co-Chair: [Donald MacDonald, United Kingdom](#)

Occupant protection systems are generally regulated by safety performance requirements established through vehicle safety standards. These standards exist for frontal and side crash protection and in

TECHNICAL SESSION TOPICS

other areas of safety in many countries world-wide. However, these requirements are generally based on the 50th percentile male population even though safety benefits could result for other population as well. Many of these standards are now incorporating additional requirements based on 5th percentile dummies. However, a concern that remains is how well the current requirements extend to other vulnerable population such as the elderly and children. In this session, papers are invited on all such topics that address safety of occupants that are vulnerable in motor vehicle crashes.

Advanced Technology #1: Safety Performance and Effectiveness of Driver Assistance Technologies, Test & Evaluation Procedures, Benefits Assessment

Chairperson: [Ray Resendes, United States](#)

Co-Chair: [Anders Lie, Sweden](#)

Advanced technologies are bringing enhanced safety to vehicles that never existed before. Driver warning and assistance technologies such as adaptive cruise control, road departure warning systems, and night vision systems have been in the market for many years. Even newer technologies are being researched and introduced, including dynamic radar-based braking systems to prevent rear-end crashes and/or to mitigate crash injury risk. To accurately estimate the safety benefits of these technologies, the safety problems and target populations at each stage of the crash event must be analyzed. An important element in this process is the development of suitable test procedures that are objective and related to real-world problems. Government regulators, research bodies, and vehicle manufacturers are examining concepts to predict the safety consequences associated with advanced technologies. Papers are invited on research related to test and evaluation procedures and estimates of potential safety benefits and other performance issues related to driver assistance safety technologies.

Vehicle Safety: Regulatory Compliance & Enforcement and Defects Investigations

Chairperson: [Claude Harris, United States](#)

Co-Chair: [Ryusuke Itazaki, Japan](#)

The session addresses how NHTSA collaborates with the international regulatory community on enforcement-related issues of mutual interest. Specifically, we will address procedures for conducting compliance and defects investigations as well as sources of relevant data, including information on recalls, investigations, consumer complaints, and early warning reporting systems in the US and other countries. Best practices for new entrant manufacturers to follow to assure compliance with applicable vehicle and equipment requirements in various countries will be discussed. The session welcomes view points from both government and industry perspectives on these discussion topics.

TECHNICAL SESSION TOPICS

Advanced Technology #2: Human Performance and Driver Behavior

Chairperson: Tim Johnson, United States

Co-Chair: Andre Seeck, Germany

Human-Machine Interface (HMI) design plays a key role in all vehicle systems requiring driver interaction. For safety systems, manufacturers are introducing advanced crash warning systems that have the potential to alert drivers of impending crash situations. The effectiveness of such systems depends on the interface design and how well drivers are able to interact with them to improve their driving performance while minimizing unintended consequences. Interface design is also critical to non-safety telematics systems to ensure that no unsafe driver distraction results. Research is underway at various institutions on the issues related to human-machine interface design, appropriate evaluation techniques, and suitable metrics for such evaluations. Evaluation protocols and metrics are fundamental to determining which HMI approaches are most effective, enabling decisions to be made with respect to HMI design, standards and guidelines. Papers are invited on research related to evaluation of crash warning, non-safety telematics, and impaired driving HMI's and how these evaluation techniques can be used to support decisions on HMI design and standardization.

Restraint System Design and Performance Challenges: Effects of Future Fleet Changes

Chairperson: Stephen Summers, United States

Co-Chair: Lex van Rooij, The Netherlands

Vehicle restraints in frontal crashes are slightly more than 50 percent effective in preventing fatalities. While better in side and rollover crashes, there is ample room for improvement. Occupant protection can be improved through the development of advanced air bags that can tailor their performance taking into consideration occupant and crash characteristics. However, the design of future vehicles is also being driven by consumer demand for higher fuel economy and the concern for global warming. In addition to exploring hybrid, diesel, and alternative fueled vehicles, manufacturers are examining many other options, including ways to remove weight from its vehicles through the use of high strength steel and other light weight materials. These design changes may affect the crash pulse and change performance requirements for occupant restraints in front and rear seating positions. Further, new crash warning systems provide opportunities to integrate alerts and optimize safety performance. These issues are receiving the attention of safety researchers worldwide. Papers are invited on research related to safety performance for new vehicle and restraint designs.

Advancements in Pedestrian and Other Vulnerable Non-Occupant Road User-Safety

Chairperson: Rikard Fredriksson, Sweden

Co-Chair: Robert Anderson, Australia

Pedestrian protection using autonomous vehicle-based solutions has been the focus of research worldwide for many years. Much progress has been made in this area. The primary vehicle ori-

TECHNICAL SESSION TOPICS

ented countermeasures are centered on improving frontal structure of passenger vehicles to mitigate head injuries and improving lower extremity injuries. However, pedestrian safety continues to be a serious problem in several countries. In many areas, in addition to vehicle-based solutions, infrastructure related solutions are also being explored. Advanced technology systems using radar, vision concepts, and other types of sensors are being investigated to identify pedestrians at intersections and to potentially provide warnings to drivers. Papers are invited in this session to address the issues faced by pedestrians and bicyclists.

NCAP and Other Non-Regulatory Strategies for Improving Safety

Chairperson: Mark Terrell, Australia

Co-Chair: Jenny Dang, United States

In recent years, New Car Assessment Programs (NCAP) and other consumer vehicle testing programs, have become widely accepted in the U.S., Europe, Japan, Australia, Korea, China, and others for conducting light vehicle safety evaluations and providing vehicle safety ratings to the general public. The motor vehicle industry improves safety performance of vehicles as it strives to receive the highest rating possible for their vehicles. In addition to assessing occupant crash safety, programs are now giving credit for advanced crash avoidance systems and providing an overall rating for a motor vehicle. While testing strategy varies from region to region, the programs all strive for similar outcomes, safer vehicles. Papers are invited for research on NCAP rating and other testing strategies. Additionally, papers relating to crash avoidance evaluation approaches and overall vehicle scores and their impact on marketing safety are encouraged.

Vehicle Structural Design Changes: Implications for Frontal Impact Protection and Compatibility

Chairperson: Bernie Frost, United Kingdom

Co-Chair: Suzanne Tylko, Canada

Frontal impact crashes continue to be one of the most predominant crash types. Car and truck manufacturers have made continuous improvement in crash protection over the last four decades. New energy demands coupled with the need to reduce global pollution will lead to more changes in vehicle fleet characteristics. Manufacturers are starting to offer very small "mini" and "micro" cars. The focus of this session is on the structural characteristics, size, stiffness and weight changes and their effect on frontal impact protection and crash compatibility. The growing diversity of vehicle sizes could lead to increased compartment intrusion in crashes, resulting in the need to optimize safety including the use of advanced technologies to improve crash safety in frontal crashes. Papers are invited to discuss structural changes that may affect or improve strategies for frontal crash protection that are being pursued globally. Session papers may also include various aspects of crash compatibility, including safety countermeasures, test devices and procedures for their evaluation, and performance requirements.

TECHNICAL SESSION TOPICS

Advances in Driver Assistance Systems for Heavy Trucks and Buses and All Aspects of Motorcycle Safety

Chairperson: Frank Barickman, United States

Co-Chair: Younghan Youn, Korea

Safety technologies for trucks and buses are topics that have received immense attention in past ESV conferences. This ESV conference will continue to focus on heavy vehicle advanced technologies, and also explore research in the human-vehicle response area. With increasing attention on driver performance, can advanced safety technologies assist drivers of large vehicles in mitigating or preventing crashes? Are these technologies capable of assisting drivers when they are drowsy and/or fatigued under long and tedious hours of operation? Technical papers on research related to these safety issues and potential solutions are invited for this session.

Motorcycle crashes are a cause of serious concern globally. In the United States alcohol use and speeding are cited as major contributing factors in these crashes. Non-use of helmets is another concern. Many of these same problems exist in other regions of the world. Motorcycle rider education and licensing, reducing the number of impaired motorcyclists on the road, increasing motorists' awareness of motorcycles, use of advanced technologies, and increased helmet use are appropriate means to improve motorcycle safety. Technical papers on research related to these safety issues and potential solutions are also invited for this session.

Assessment of New and Improved Field Data Collection & Analysis Methods

Chairperson: Andre Seeck, Germany

Co-Chair: Augustus (Chip) Chidester, United States

For more than three decades accident reconstruction methods have been successfully used in investigating real-world crashes and determining causes of crashes and injuries. These data play a leading role in development of crash prevention and crash protection countermeasures. However, due to changes in technology, the collection and analysis of these valuable data are evolving. For example, several naturalistic studies are in progress in various regions of the world that will provide additional insight into how crashes occur, providing information on how to prevent motor vehicle crashes. Worldwide, programs in Asia, UK, Germany, and others in Europe and the USA are being used more to drive research and policy decisions. This session invites papers aimed at a discussion of future data collection and analysis methods. Papers related to such topics as event data recorders, naturalistic driving data on human-vehicle performance, analytical methods for estimating potential benefits of safety technologies, evaluation methods of video data, universal descriptions of crash causal factors and resulting crash types, crash reconstruction and other related topics are welcome in this session.

SOCIAL PROGRAM



Welcome Reception

Price: Complimentary with registration fee

Date: Monday, June 13, 2011

Time: 7:00 – 9:00 pm

Location: Orchard Terrace National Harbor

One ticket per registered attendee; guest price \$95.00.

ESV Gala Dinner

Price: \$175.00 per person

Date: Wednesday, June 15, 2011

Time: 7:00 – 11:00 pm

Location: The Sunset Room at National Harbor

The ESV Conference Organizers invite you to attend the Gala Dinner to take place at The Sunset Room at National Harbor. With its spectacular floor to ceiling windows and outdoor terraces wrapping the entire perimeter, the Sunset Room offers stunning panoramic views of the Potomac River and area historic landmarks. In this majestic atmosphere, guests will have the opportunity to indulge their senses with a menu of distinctive hors d'oeuvres, sumptuous entrees, and desserts while enjoying live entertainment and dancing to the smooth sounds of the Galaxy Band. This is a great opportunity to relax, make new international connections, and enjoy an unforgettable evening.

To register go to: www.esvconference2011.com

SOCIAL PROGRAM



Technical Event

Vehicle Technology Ride and Drive

Date: Tuesday, June 14 and
Wednesday, June 15, 2011

Time: 9:00 am – 4:00 pm

Location: Bus loop adjacent to side entrance to
Gaylord National Hotel

Fee: Complimentary to all registered ESV participants on a first come, first served basis.

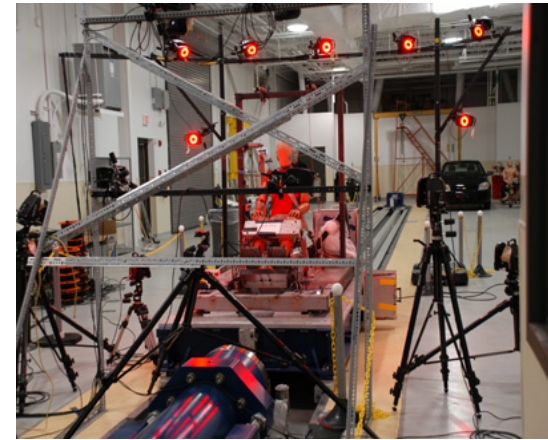
We are pleased to offer registered ESV participants an opportunity to view, ride and drive the latest in vehicle crash avoidance, vehicle communications and other advanced safety technologies that are being developed by automotive manufacturers and their suppliers. There will be numerous vehicles on display, technology demonstrations given and production and prototype vehicles available for test drives or to ride along with a professional driver.

Registered attendees can sign up for drives with the various manufacturers throughout the entire period of the event (Tuesday and Wednesday). Signup sheets will be available at the main ESV Conference registration desk. All vehicles will depart from the bus loop adjacent to the side entrance to the Gaylord National Hotel. A valid driver's license (any state or country license) is required to be able to drive the vehicles. Please join us for a technology filled event where you will see and experience state-of-the-art safety!

To register go to: www.esvconference2011.com



SOCIAL PROGRAM



Technical Tour

**Laboratory Tour and Crash Tests at
Insurance Institute for Highway Safety
and University of Virginia**

Price: \$50.00 per person (limit 100 people)

Date: Friday, June 17, 2011

Time: 9:00 am-5:00 pm

We are pleased to offer an exciting all-day technical tour showcasing two facilities located in the foothills of the Blue Ridge Mountains, about a two-hour drive from Washington, D.C.

The tour will first visit the Insurance Institute for Highway Safety's Vehicle Research Center (VRC) in Ruckersville, Virginia. A state-of-the-art crash test facility, funded exclusively by auto insurers, the VRC is the only independent nonprofit crash test lab in the United States. The Institute has been rating vehicle crashworthiness for 16 years, evaluating front, side, rollover, and rear impact protection and awarding Top Safety Pick awards to the best performers. Visitors will follow a self-guided tour of the VRC and then witness a crash test.

Following the IIHS tour, you will take a short bus ride to Charlottesville, Virginia to visit the new laboratory of the University of Virginia Center for Applied Biomechanics, a joint venture of the Schools of Engineering and Medicine and the largest university-based injury biomechanics laboratory in the world. The facility boasts several state-of-the-art pieces of equipment, as well as custom resources and capabilities that are unique to the laboratory. This includes specialized materials testing machines, a servo-controlled reverse-acceleration sled and a deceleration sled, a 16-camera high-speed motion capture system, and the world's first university-based full-scale rollover sled system, which is capable of rolling a sport-utility vehicle at 400-deg/s and dropping it onto a moving roadbed. The facility tour will include a sled test exhibition and a live rollover test.

Included with the tour is round-trip, air-conditioned, motorcoach transportation from the Gaylord National Hotel to both labs. A box lunch will be provided before leaving the IIHS lab. Please let us know if you have any food restrictions. We will make every effort to accommodate your request.

To register go to: www.esvconference2011.com



STUDENT SAFETY TECHNOLOGY DESIGN COMPETITION



Background

The Collegiate Student Safety Technology Design Competition gives young scholars from Asia-Pacific, Europe, and North America an exciting opportunity to design, build, and demonstrate a potentially cost effective conceptual scale model of a vehicle safety technology. Participating teams must be from an ESV Member Country. Teams consisting of university level seniors and/or graduate students, guided by a faculty advisor, entered a 300-word abstract on a theme related to a global vehicle safety research priority. Entries were judged on the basis of their abstract in each of the three geographical regions, and teams from each region have been selected to compete in their regional competitions. Panels of safety experts from each region will visit their team’s school and evaluate the safety devices and the designs, and select teams which will become the finalists in each region.

The team finalists from each region compete for top honors at the 2011 ESV Conference in Washington, DC, and their prototype devices will be displayed in the Exhibition Hall at the ESV Conference. An international panel of judges made-up of vehicle safety engineering experts from around the globe, will select the first-place winner and the runner up, both of whom will receive their respective awards and international recognition for their achievements.

Key Dates

Entry Submission (Abstract) Deadline October 29, 2010
Notification of Selected Applicants November 12, 2010
Regional Design Evaluation March 14 -25, 2011
Notification of International Finalists April 10, 2011
Oral Presentation by International Finalists June 15, 2011
First-place winner and runner-up selection and recognition June 16, 2011

STUDENT SAFETY TECHNOLOGY DESIGN COMPETITION

Safety Projects Accepted to Compete in the Regional Competitions:

Project Title	University Teams
Asia-Pacific	
"Development of new type dummy with Ca2+ increase in cell injury"	Nihon University
"New Restraint System for the Pedestrian to Prevent Collision with the Road Surface"	Tokyo City University
"Active Alert Display for Improving Visibility and Conspicuity on Driving"	Nihon University
"Development of the smart whiplash protectable seating system on non-symmetrical rear impact crashes"	Korea University of Technology and Education/Seoul National University of Science and Technology
Europe	
"Investigation into the application of an active bracing device for improved vehicle crash compatibility"	HTWdS (University of Applied Sciences Saarland)
"Child restraint system with pretensioner and load limiter functionality"	Universidad Politécnica de Madrid
"Restraint Systems for Pregnant Occupants"	Loughborough University
North America	
"Autonomous Crash Avoidance"	Cal Poly State University
"Improving Restraint Feasibility through Ambulance Layout Redesign"	Montana State University
"The Design and Testing of a Low-Cost Child Restraint for Use in Developing Countries"	University of Michigan
"Estimating Alertness Levels from Speech Analysis"	Virginia Tech
"DriveID: Individualized risk mitigation for diverse high risk drivers"	University of Central Florida
"Deflection Measurement System for the Hybrid III Six-Year-Old Biofidelic Abdomen"	VT-WFU Center for Injury Biomechanics

More details on this competition can be found at:
<http://www-esv.nhtsa.dot.gov>

GENERAL CONFERENCE INFORMATION

Access to the conference venue (Gaylord National Harbor)

National Harbor is located just south of the Woodrow Wilson Bridge along the Capital Beltway in Prince George's County, Maryland, just 10 minutes from downtown Washington, D.C. This waterfront community is currently home to six hotels (including the Gaylord National Resort and Convention Center, the largest such facility on the East Coast), nearly 500 residential units, a marina and scores of shops, restaurants and offices.

Arrival by Plane

From Dulles International Airport

Washington Dulles International Airport (IAD) is located in Chantilly, Virginia, and is 26 miles west of downtown Washington, D.C., the Nation's Capital. The new highway ramp from the eastbound Dulles Greenway 267 now provides direct access to Dulles International Airport. The entrance to the new ramp is located just beyond the Main Greenway Toll Plaza.

From Reagan Washington National Airport

Ronald Reagan Washington National Airport (DCA) is located in Arlington, VA just across the Potomac River from the Nation's Capital. Built in 1941, the airport's original Terminal, now called Terminal A, is on the National Register of Historic Places. Taxicabs serve the Airport queue in a two-level 118,000 square foot structure designed to accommodate 500 vehicles. About 5,000 taxicabs are dispatched at the Airport every day. SuperShuttle, a shared-ride van service picks up passengers at their homes, businesses or hotels within the metro area and transports them to the airport. The Airport is also served by five car rental companies located on site.

From Baltimore-Washington International Airport

The airport is located in northern unincorporated Anne Arundel County, about 10 miles (16 km) south of Baltimore and 30 miles (48 km) northeast of Washington, D.C. The MTA's light rail station is located within the main terminal. BWI Rail Station is located about a mile from the airport terminal; a free shuttle bus connects the train station and airport terminals. The station is served by Amtrak Northeast Corridor trains and, on weekdays, by the MARC Penn Line.

Arrival by Car

National Harbor is directly accessible from the Capital Beltway, I-95, I-495, I-295, and the new Woodrow Wilson Bridge, and is minutes away from all three area airports. There are interchange and multi-lane fly-off ramps exiting exclusively into the community from Maryland, Virginia, and D.C.

Car Rental

There are many rental car companies to choose from for pickup at Dulles Airport, Reagan National Airport or Baltimore-Washington International Airport as well as several other locations throughout the Baltimore-DC area:

Alamo (800) 462-5266	Dollar (800) 800-4000	Thrifty (800) 367-2277
Avis (800) 331-1212	Hertz (800) 654-3131	Enterprise (800) 736-8222
Budget (800) 527-0700	National (800) 227-7368	

Arrival by AmtrakTrain

Union Station is located on the Metro Red Line at 50 Massachusetts Ave., NE, Washington, DC 20002. To make train reservations, contact Amtrak at 1-800-872-7245 or www.amtrak.com. For more information on Union Station, visit www.unionstationdc.com

GENERAL CONFERENCE INFORMATION

Gaylord National Hotel & Convention Center

201 Waterfront Street

National Harbor, MD 20745



Daily Parking Rates at Gaylord National Harbor

\$5.00 for first hour

\$12.00 for 0-3 hours self parking

\$19.00 per day self parking/overnight

\$17.00 for 0-3 hours valet parking

\$28.00 per day valet parking/overnight

Public Transportation

The closest Metro stop to the Gaylord is Branch Avenue which is located on the Green line.

For train and bus schedules, route maps and current pricing, please visit:

<http://www.wmata.com/?source=GaylordNational>

GENERAL CONFERENCE INFORMATION

Taxi

Estimated pricing from the following area airports to Gaylord National Harbor:

- Reagan National (DCA) - \$20
- Dulles (IAD) - \$55
- Baltimore Washington (BWI) - \$65

Shuttle Service

SuperShuttle understands that travel can be stressful and complicated. That’s why they don’t just give their customers a lift to the airport—they give their spirits a lift, too! Committed to simplifying ground travel, SuperShuttle’s friendly, responsive, and reliable drivers and staff work hard to make each and every ride a positive experience for their passengers. When you board a van in any of the 22 cities served by SuperShuttle, you’ll learn what millions of people already know—SuperShuttle is an easier way to get to and from the airport.

<i>From Reagan National (DCA) to Gaylord National</i> This convenient new service will depart every twenty minutes from Gaylord National’s front door to Reagan National Airport, and every twenty minutes from the Reagan National Airport baggage claim.	Daily Shuttle 6:00 AM–8:00 PM Ticket Prices: <ul style="list-style-type: none">• \$18 one way• \$32 per person, round trip• \$78 for exclusive van service, booked in advance
<i>From Dulles International Airport (IAD) to Gaylord National</i> \$43 per passenger/\$125 exclusive	<i>From Baltimore/Washington Airport (BWI) to Gaylord National</i> \$43 per passenger/\$125 exclusive

Upon arrival at airport, follow the signs for Ground Transportation to SuperShuttle. Reservations are recommended, but tickets also will be available from the SuperShuttle desk, located on the lower level of the airport, near baggage claim.
Local Reservations: 1 (800) 660-8000 TDD Reservations: (866) 472-4497

Bus Service

National Harbor and the Gaylord National Hotel are connected to the Washington Metropolitan Area Transit Authority (WMATA), or Metro system, via a limited-stop bus route.

Water Taxi Service

Water taxi service is available to and from several points around Washington D.C., Virginia and Maryland. Potomac Riverboat Company operates a water taxi service that allows travelers to explore this historic region from the dynamic perspective of the Potomac River. Cruise to Old Town Alexandria to shop, dine and experience this historic city. Visit President George Washington’s home at Mount Vernon Estate & Gardens. Or, take a trip to Georgetown with a breathtaking view of the monuments along the way. [For a complete schedule and to purchase your ticket online, please visit: www.potomacriverboatco.com.](#)

GENERAL CONFERENCE INFORMATION

Registration Fees	Price
March 1, 2011–June 3, 2011	\$949.00
Pre-Registration Closes June 3, 2011	
On-site Registration	\$1,099.00
One Day Fee	\$399.00
Student Fee	\$350.00
Student One Day Fee	\$70.00
Speaker Fee	\$550.00
ESV Gala Dinner (per person)	\$175.00
Technical Tour (per person)	\$50.00

Attendee fee includes one welcome reception and four lunches.

Registration Online

Registration can be made online until June 3, 2011 on the ESV Conference website at: www.esvconference2011.com

Registration by Fax

Registration can be made via the registration form, which can be received by calling the conference registration office at (301) 596-6031 or 1 (888) 670-2722. Registration forms should be faxed back to the office at (410) 715-2595.

Exhibitors

Pricing for exhibitor space will be \$25.50 per square foot. All booths are 10x10 and the number of spaces for purchase is based on availability. Exhibitor fee includes one attendee. To register additional attendees, please see the above fee schedule.
[Exhibitor fee includes one registrant, one table, one chair, one wastebasket, pipe and drape.](#)

Payment

All payments (registration fees, hotel costs, etc) should be made in U.S. dollars. When registering online, a confirmation of the registration and payment will immediately be sent to the indicated e-mail address. If payment is sent by mail, a receipt will be emailed to participant. When registering by fax, a receipt will be emailed to participant upon charging of credit card.

Refund and Cancellation Policy

If a registrant is unable to attend, the conference registration office must receive a written request no later than April 16, 2011 to receive a refund. There will be a \$150 cancellation fee for exhibitors and a \$75 cancellation fee for attendees. No refunds will be given after April 16, 2011.

Refund and Cancellation Policy for Accommodation

Deposits are refundable for cancellations occurring three days, (72) hours prior to arrival.

GENERAL CONFERENCE INFORMATION

Refund and Cancellation Policy for Social Programs

There are no refunds provided for cancellation of attendance at any of the social programs.

Services for Persons with Disabilities

Gaylord National offers accommodations and devices specifically for guests with disabilities. All interior and exterior public spaces are accessible to guests with disabilities. Accommodations for guests with disabilities include: accessible guest rooms are available and offer a variety of features to accommodate different disabilities, service animals are allowed for persons with disabilities, designated parking areas for guests with disabilities are available. A valid disability parking permit is required. Signage and elevators throughout the property feature Braille. Guest room bathrooms include wider bathroom doors, roll-in showers, shower benches (available by request), hand-held shower heads, accessible vanities, and bathroom rails. Guest room communications include door chimes (available by request) and strobe-light fire alarms.

Insurance and Liability

It is highly recommended that all participants have adequate travel and health insurance, as the organizers of the ESV Conference 2011 cannot accept any liability for accidents, illnesses or injuries that may occur at or during the conference.

Identification Documents and Customs

Upon arrival to the airport, each adult traveler should keep his/her airline boarding pass and government-issued photo ID available until exiting the security checkpoint. The absence of proper identification will result in additional screening. All international visitors regardless of country of origin must present a passport or secure document when entering the United States by air. Citizens of some countries need visas to enter the U.S. and should plan to apply for their visas well in advance. Due to new security measures, it takes longer for U.S. embassies and consulates abroad to process applications.

Currency / Credit Cards

The United States dollar is the official currency of the United States of America. The U.S. dollar is normally abbreviated as the dollar sign, \$, or as USD or US\$ to distinguish it from other dollar-denominated currencies and from others that use the \$ symbol. It is divided into 100 cents. Credit cards can be used for almost any purchases in the United States. Widely accepted credit cards in the U.S. are Visa, MasterCard, American Express and Discover.

Banks

There are three Capital One (formerly Chevy Chase) ATM's located throughout the National Harbor. There is one generic ATM located in the Gaylord National Harbor hotel.

Climate

In Washington, D.C. the average temperature in June is high in the mid 80's °F, and low's in the mid 60's °F. The average rainfall in June is 3.63 inches.

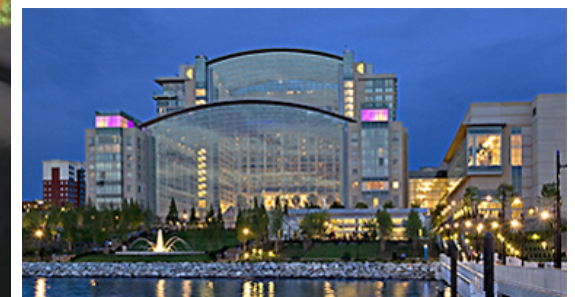
ACCOMMODATIONS



GAYLORD NATIONAL®

RESORT & CONVENTION CENTER

on the Potomac



To reserve a hotel room please call The Gaylord National Hotel and Convention center and mention The ESV Conference before May 21, 2011 to receive special room rates:

Toll free: 1 (866) 972-6779

Local: (301) 965-4000

Or register online using the following codes for special room rates:

C-DOT11 for group rate (\$211)

C-DOT1G for government rate

www.gaylordhotels.com/gaylord-national

GOVERNMENT FOCAL POINTS

COUNTRY	NAME / TITLE	AFFILIATION
 AUSTRALIA	Mr. Robert Hogan General Manager	Vehicle Safety Standards Department of Transport and Regional Services
 CANADA	Ms. Suzanne Tylko Chief of the Crashworthiness Division	Transport Canada
 EUROPEAN COMMISSION	Mr. Philippe Jean Directorate General Enterprise and Industry	European Commission
 EUROPEAN ENHANCED VEHICLE- SAFETY COMMITTEE	Dr. Dominique Cesari Scientific Director	INRETS
 FEDERAL REPUBLIC OF GERMANY	Dr. Peter Reichelt President	Federal Highway Research Institute (BAST)
 FRANCE	Mr. Bernard Gauvin Ingénieur général des mines	Ministère des transports
 HUNGARY	Mr. János Déak Head of the Technical Co-ordination Centre for EU and –UN-ECE Activities on Road Vehicles	KTI/Institute for Transport Sciences
 ITALY	Dott. Ing. Antonio Erario Head of Division 1	International Regulation Affairs Ministry of Infrastructure and Transport Department for Transport
 JAPAN	Mr. Ryusuke Itazaki Director International Affairs Office, Engineering and Safety Department, Road Transport Bureau	Ministry of Land Infrastructure and Transport (MLIT)
 POLAND	Mr. Wojciech Przybylski Technical Development Director	Motor Transport Institute (Instytut Transportu Samochodowego)
 REPUBLIC OF KOREA	Mr. Jongwoo Ryu Deputy Director	Motor Vehicles Policy Division Ministry of Land, Transport & Maritime Affairs
 SWEDEN	Mr. Anders Lie Specialist	Head Office, Swedish Road Administration
 THE NETHERLANDS	Mr. Kees Doornheim Head of Vehicle Standards Development	RDW Vehicle Approval and Information
 UNITED KINGDOM	Mr. Ian Yarnold Deputy Head of Vehicle Technology and Standards	Department for Transport
 UNITED STATES OF AMERICA	Mr. John Maddox Associate Administrator for Vehicle Safety Research	National Highway Traffic Safety Administration

Registration Form

Register online by visiting www.esvconference2011.com or mail or fax this form to:

American Small Business Alliance, ATTN: ESV Conference, 9030 Red Branch Road Ste.190,
Columbia, MD 21045, UNITED STATES

Fax: (410) 715-2595

Please print legibly and use a separate form for additional attendees/exhibitors.

Salutation.....

First/Last Name.....

Title.....

Company.....

Address.....

Address.....

Phone..... Fax.....

Email.....

Salutation.....

First/Last Name.....

Title.....

Company.....

Address.....

Address.....

Phone..... Fax.....

Email.....

Exhibitors: Please provide a brief description of the product and/or service you will be exhibiting:

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Registration Form, cont.

Registration Fees

Attendee		Quantity	Amount
March 1, 2011–June 3, 2011	\$ 949.00
On site Registration	\$ 1,099.00	.....	.....
One Day Fee	\$ 399.00	.....	.....
Student Fee	\$ 350.00	.....	.....
Student One Day Fee	\$ 70.00	.....	.....
Speaker Fee	\$ 550.00	.....	.....
Social & Technical Events			
Accompanying Guest for Welcome Reception	\$ 95.00	.....	.....
ESV Gala Dinner (per person)	\$ 175.00	.....	.....
Technical Tour (per person)	\$ 50.00	.....	.....
Exhibitor 10x10 booth at \$25.00/sq ft	\$2,550.00	.....	.....
TOTAL.....		.....	.....

Please indicate your method of payment below. Information must be entered exactly as it is printed on the credit card.

Card Type (circle one): Visa MasterCard American Express

Card Number.....

Expiration..... Security Code

Cardholder's Name

Cardholder's Signature.....

Billing Address.....

City.....State..... Zip Code.....

Please Note: Attendee Fee Includes: (1) one welcome reception, and (4) four lunches. Exhibitor spaces for purchase based on availability. Exhibitor Fee Includes: (1) one registrant, (1) one table, (1) one chair, (1) one wastebasket, pipe, and drape. To register additional attendees, please see the above fee schedule.

Full payments must be made within the registration periods above to receive the designated pricing. Any payment received out of the stated registration time period will be assessed at the current registration fee.

Cancellations/Substitutions: If a registrant is unable to attend, the conference registration office must receive a written request no later than April 16, 2011 to receive a refund less cancellation fees. There will be a \$150 cancellation fee for exhibitors and a \$75 cancellation for attendees. No refunds will be given after April 16, 2011. Attendee substitutions may be made any time before May 1, 2011 via fax.

BRIEF HISTORY OF ESV

ESV began in the early 1970s under bilateral agreements between the Governments of the United States, France, Germany, Italy, the United Kingdom, Japan, and Sweden.

The participating nations agreed to develop experimental safety vehicles to advance the state-of-the-art technology in automotive engineering and to meet periodically to exchange information on their progress. Since its inception the number of international partners has grown to include the Governments of Canada, Australia, the Netherlands, Hungary, Poland, the Republic of Korea, and two international organizations - the European Enhanced Vehicle-Safety Committee, and the European Commission. The conference has grown into a four day event and consists of technical session presentations, plenary discussions, a student safety technology design competition, technical exhibitions, and social events.

LOCATIONS OF PAST ESV CONFERENCES

- 1st Paris, France 1971
- 2nd Sindelfingen, Germany 1971
- 3rd Washington, DC, United States 1972
- 4th Kyoto, Japan 1973
- 5th London, United Kingdom 1974
- 6th Washington, DC, United States 1976
- 7th Paris, France 1979
- 8th Wolfsburg, Germany 1980
- 9th Kyoto, Japan 1982
- 10th Oxford, United Kingdom 1985
- 11th Washington, DC, United States 1987
- 12th Göteborg, Sweden 1989
- 13th Paris, France 1991
- 14th Munich, Germany 1994
- 15th Melbourne, Australia 1996
- 16th Windsor, Ontario, Canada 1998
- 17th Amsterdam, The Netherlands 2001
- 18th Nagoya, Japan 2003
- 19th Washington, DC, United States 2005
- 20th Lyon, France 2007
- 21st Stuttgart, Germany 2009

KEY DATES

Final Paper due: March 16, 2011
Online Registration due: June 3, 2011



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



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